

INTERVAL SHEET

WWCR 28

Page 1

VDMR Well No.: Well No. 1413

Date 11/15/65

Sample Interval: from 0 to 460

PROP: Federal Reserve Bank  
of Richmond  
COMP: Leazer Pump & Well Co.

Total depth 460

COUNTY: Culpeper (Mt. Pony)

Oil  Gas  Water  Exploratory

Cuttings  Core  Other

VDMR Well No: W-1413

Washed Samples

From-To	From-To	From-To	From-To	From-To
-	-	0 - 10	300 - 310	-
-	-	10 - 20	310 - 320	-
-	-	20 - 30	320 - 330	-
-	-	30 - 40	330 - 340	-
-	-	40 - 50	340 - 350	-
-	-	50 - 60	350 - 360	-
-	-	60 - 70	360 - 370	-
-	-	70 - 80	370 - 380	-
-	-	80 - 90	380 - 390	-
-	-	90 - 100	390 - 400	-
-	-	100 - 110	400 - 410	-
-	-	110 - 120	410 - 420	-
-	-	120 - 130	420 - 430	-
-	-	130 - 140	430 - 440	-
-	-	140 - 150	440 - 450	-
-	-	150 - 160	450 - 460	-
-	-	160 - 170	-	-
-	-	170 - 180	-	-
-	-	180 - 190	-	-
-	-	190 - 200	-	-
-	-	200 - 210	-	-
-	-	210 - 220	-	-
-	-	220 - 230	-	-
-	-	230 - 240	-	-
-	-	240 - 250	-	-
-	-	250 - 260	-	-
-	-	260 - 270	-	-
-	-	270 - 280	-	-
-	-	280 - 290	-	-
-	-	290 - 300	-	-

OWNER: Federal Reserve Bank of Richmond  
DRILLER: Leazer Pump and Well Company  
COUNTY: Culpeper (Mt. Pony)

VDMR #1413  
WWCR #28  
TOTAL DEPTH: 460'

GEOLOGIC LOG

- 0-10 Arkosic Shale — light-brownish- to purplish-gray; plagioclase, sericite, actinolite, epidote, hematite; minor small ferruginous nodules.
- 10-20 As above — more purple.
- 20-30 As above.
- 30-40 Amphibole Gneiss — medium-gray, medium-orange-brown; fine- to medium-grained; hornblende, muscovite, biotite, quartz, and feldspar.
- 40-50 Shale and Arkosic Siltstone — shale: red-purple-gray; silty and siliceous with minor patches of epidote and veins of calcite; arkosic siltstone: medium-light-gray, coarse siltstone to fine sandstone; plagioclase, epidote, quartz, actinolite, sericite, calcite, minor specular hematite; occasional fragments of yellow-green epidote.
- 50-60 As above — minor fragment of massive dark-green chlorite.
- 60-70 As above — arkose more calcareous, more abundant, contains more epidote.
- 70-80 As above — much less arkose; patches of epidote with specular hematite are common.
- 80-90 Arkosic Siltstone and Shale — arkosic siltstone: pale-purple-gray; fine- sand to coarse-silt, abundant epidote and dusty specular hematite; minor calcite; shale: dark-red-gray, silty.
- 90-100 As above — less shale.
- 100-110 As above — minor tiny veins of calcite and trace of weathered zone in which hematite is altered to goethite and limonite stain.
- 110-120 Arkose — red-purple-gray, fine-sand to fine-silt; feldspar, quartz, epidote, hematite, minor chlorite, trace calcite.
- 120-130 Shale and Arkosic Siltstone — shale: dark-red-brown, siliceous, micaceous, slightly fissile; arkosic siltstone: pale-purple and pale-green; feldspar, epidote, quartz, hematite, and calcite.

OWNER: Federal Reserve Bank of Richmond

#1413

- 130-140 Shale — red-purple-brown, silty, micaceous, and siliceous with epidote and hematite.
- 140-150 As above — less micaceous, trace of massive chlorite, tiny veins of calcite.
- 150-160 Arkose — medium-gray, fine-silt; patches of yellow-green epidote, calcareous; minor red shale as above.
- 160-170 Shale and Arkose — shale: red, brown and dark-purple-gray, micaceous and siliceous, fissile in part; arkose as above.
- 170-180 Arkose — medium-purple-gray; fine-sand to coarse-grained-silt; fine-grained portions are siliceous and slightly fissile; feldspar quartz, epidote, hematite, minor yellow-green patches of epidote.
- 180-190 As above — slightly green, minor chlorite, minor weathered zone with goethite.
- 190-200 Arkose — red-purple-gray to dark-green-gray, shaly to fine-sand; feldspar, quartz, epidote, chlorite, hematite; minor calcite.
- 200-210 As above — slightly finer grained.
- 210-220 Arkose — medium-purple-red-gray to medium-light-gray; fine-sand-size-grains; feldspar, epidote, quartz, calcite, mica and hematite.
- 220-230 Shale and Arkose — dark-gray, fissile, chloritic shale; dark-green-gray, chloritic arkose; red-brown, massive shale; light-gray-green, sandy arkose with calcite, epidote and pyrite; vein calcite and quartz.
- 230-240 As above — fragments of massive epidote with specular hematite.
- 240-250 Calcareous Arkose — medium-light-greenish-gray, medium-sand to fine-silt-size grains; epidote, calcite, feldspar, quartz, chlorite, pyrite; minor red-brown siltstone and shale and dark-gray chloritic shale; numerous tiny calcite veins.
- 250-260 Arkose — medium-light-pinkish-gray; coarse-silt-size-grains; quartz, feldspar, epidote minor calcite; tiny veins of calcite and quartz; minor medium-dark-gray chloritic shale; one fragment of shale contains a cavity filling of calcite.

OWNER: Federal Reserve Bank of Richmond

#1413

- 260-270 Shaly Arkose — dark-red-purple-gray; medium-sand to clay-size-grains; hard and fissile; quartz, feldspar, mica, hematite; minor hematite bearing epidote; trace of dark-gray chloritic, micaceous shale.
- 270-280 Calcareous Arkose — medium-light-green-gray; fine-sand to fine-silt-size-grains, slightly fissile; quartz, feldspar, epidote, calcite; minor red, shaly arkose as above and dark-gray, chloritic shale.
- 280-290 Arkosic Shale — dark-gray, chloritic and calcareous; with abundant pyrite and minor calcite.
- 290-300 Arkose — medium-light-gray, very-fine-sand-size-grains, calcareous, slightly fissile; feldspar, quartz, epidote, calcite, actinolite and abundant euhedral pyrite.
- 300-310 As above — slightly reddish; less pyrite, more epidote.
- 310-320 Arkose — pale-red-gray, fine-sand to silt-size-grains; minor pyrite and yellow-green epidote.
- 320-330 Arkose — medium-red-purple-gray, medium-sand to silt, slightly fissile, calcareous; trace pyrite.
- 330-340 As above — with pale-greenish-gray-arkose which is less fissile.
- 340-350 As above — no pale-greenish-gray arkose, no pyrite.
- 350-360 As above — minor greenish-gray arkose; coarser grained.
- 360-370 As above — less greenish-gray arkose; trace dark, chloritic shale.
- 370-380 Arkose — medium-red-purple-gray; medium-coarse-sand to fine-silt-size-grains, calcareous, slightly fissile; feldspar, quartz, epidote, calcite, chlorite; minor mica.
- 380-390 As above — slightly-finer grained.
- 390-400 As above — trace euhedral vein calcite.
- 400-410 As above — micaceous, grayer.
- 410-420 As above — coarser grained and brighter red-purple.
- 420-430 As above.
- 430-440 As above — finer-grained.

OWNER: Federal Reserve Bank of Richmond

#1413

440-450 Arkose — medium-green-gray; medium-sand to fine-silt-sized grains; feldspar, quartz, chlorite, epidote, minor pyrite; minor red arkose as above.

450-460 Arkose — medium-greenish-gray and medium-red-purple-gray, medium-sand to fine-silt, slightly calcareous; feldspar quartz chlorite, epidote, more pyrite.

GEOLOGIC SUMMARY

ROCK UNIT

TIME ROCK UNIT

Bull Run Shale

Triassic

The arkoses in this log appear to be largely composed to pyroclastic detritus.

Virginia Division of Mineral Resources  
Hollis N. Walker, Geologist  
November 22, 1965